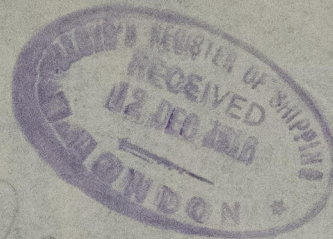


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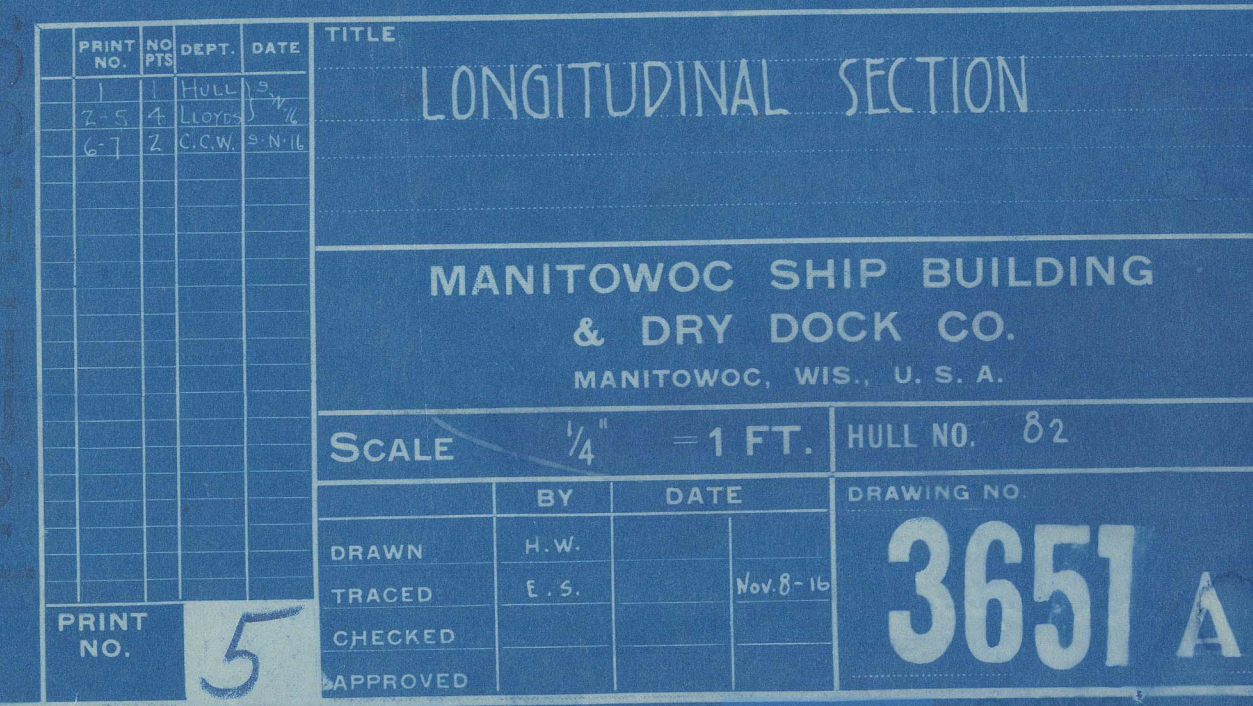
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S. S. "War Carle"
Chicago Rkt. No. 31
Midship Section



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Linda

Memorandum to Gibbs for
of 86-92

W1407-0030

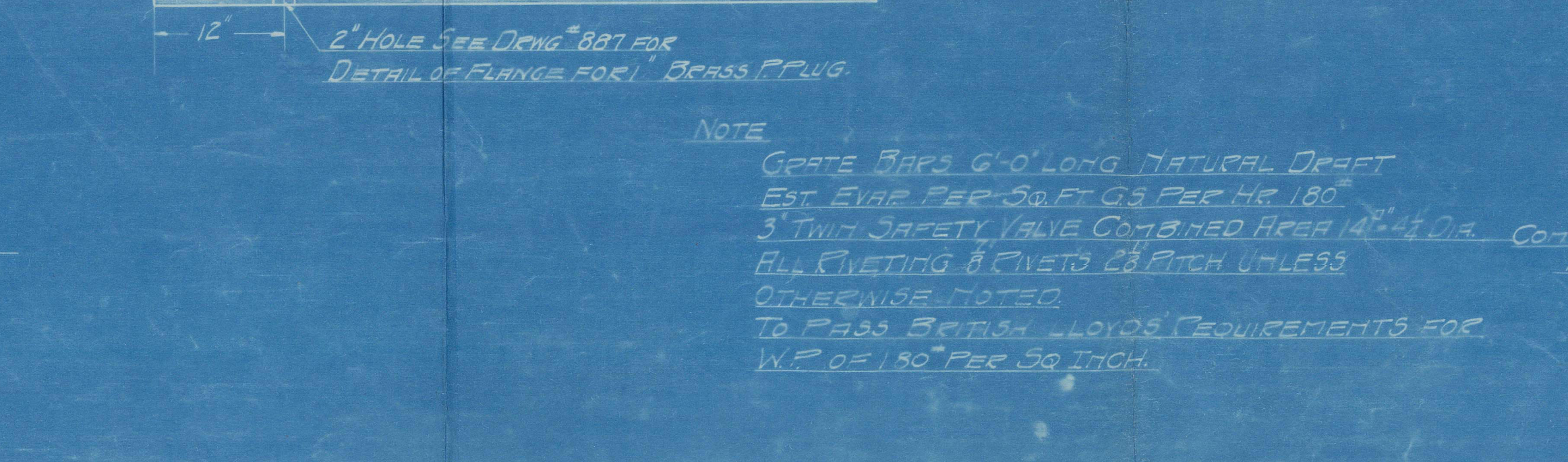
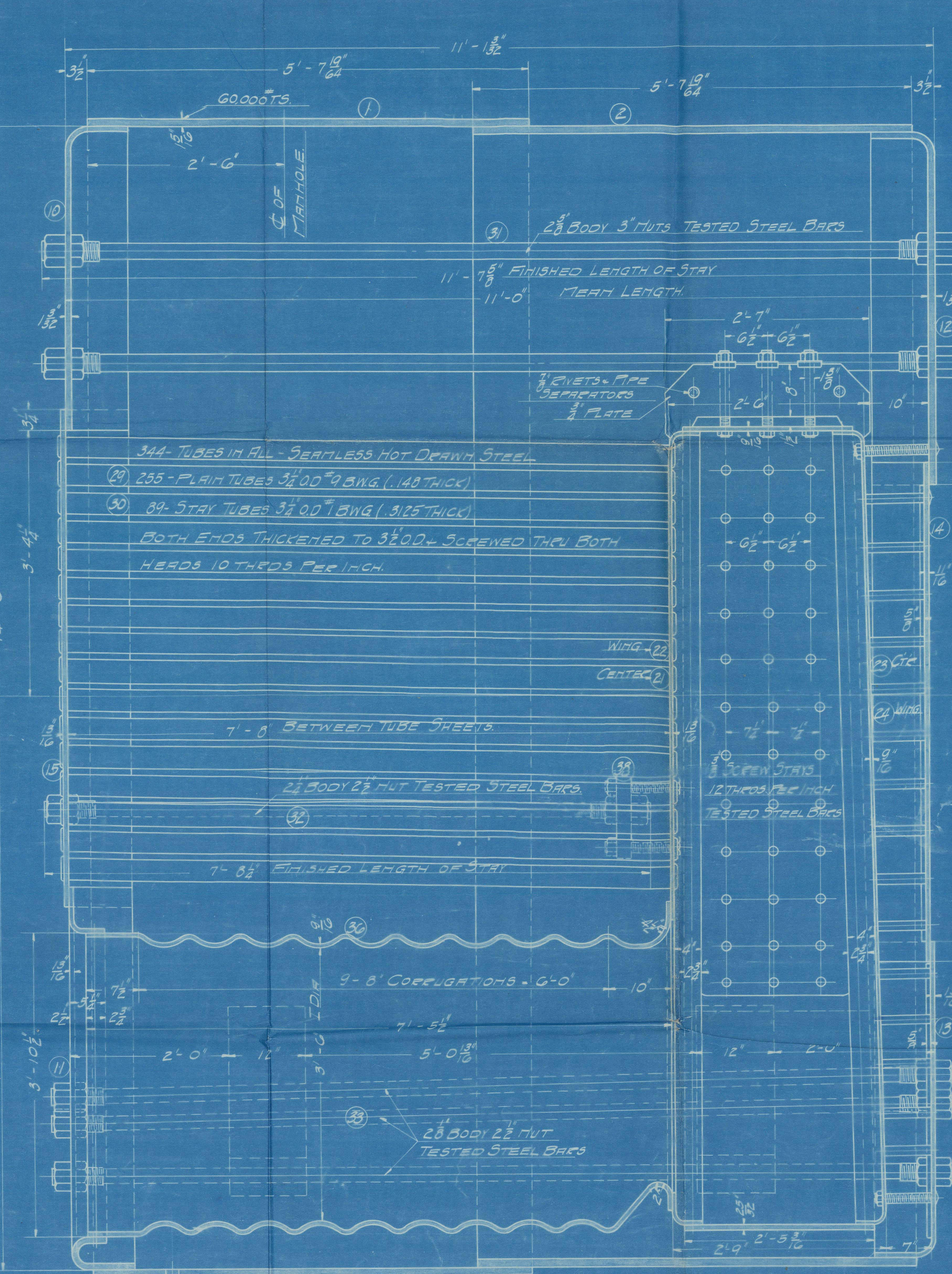
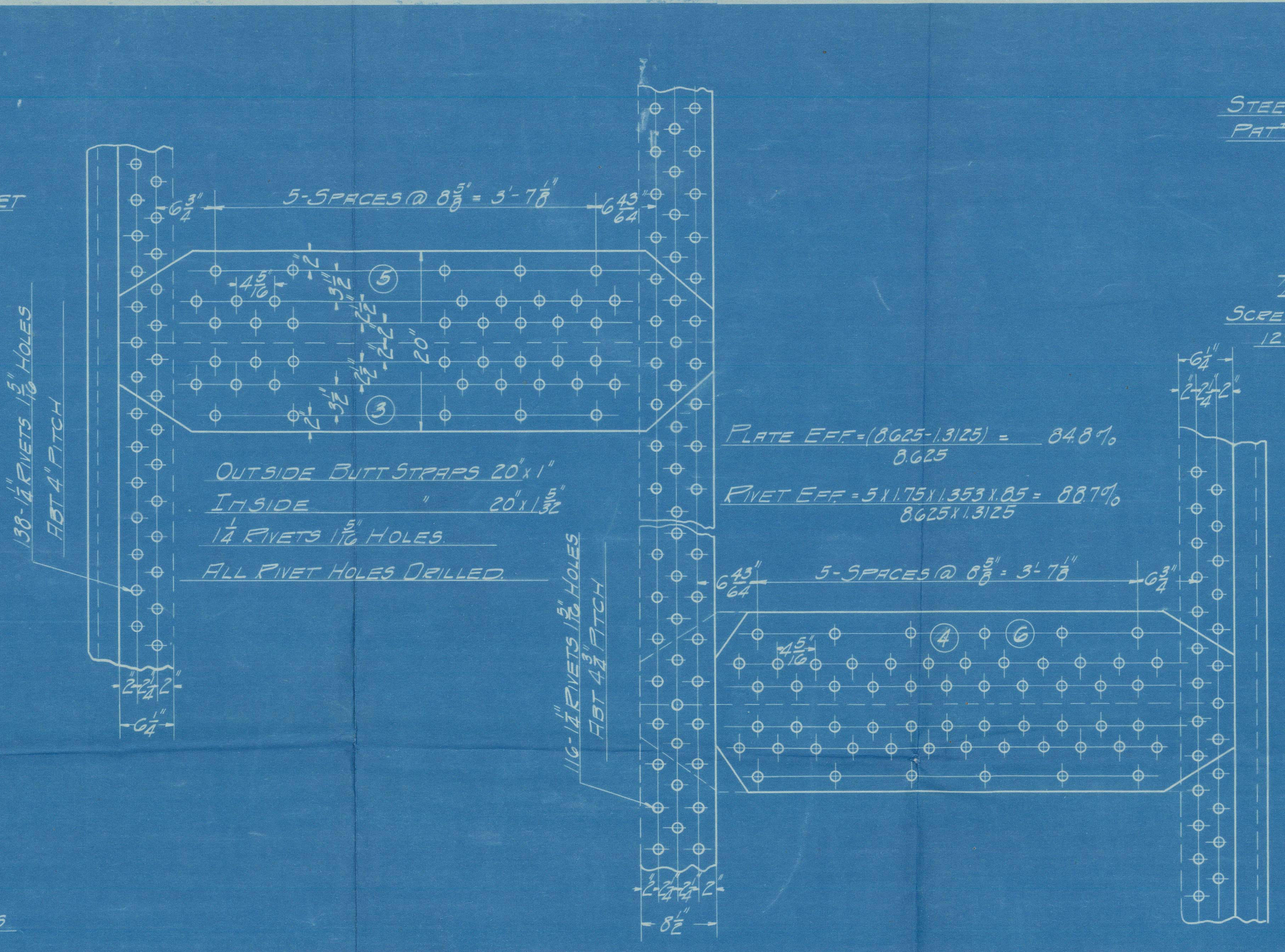
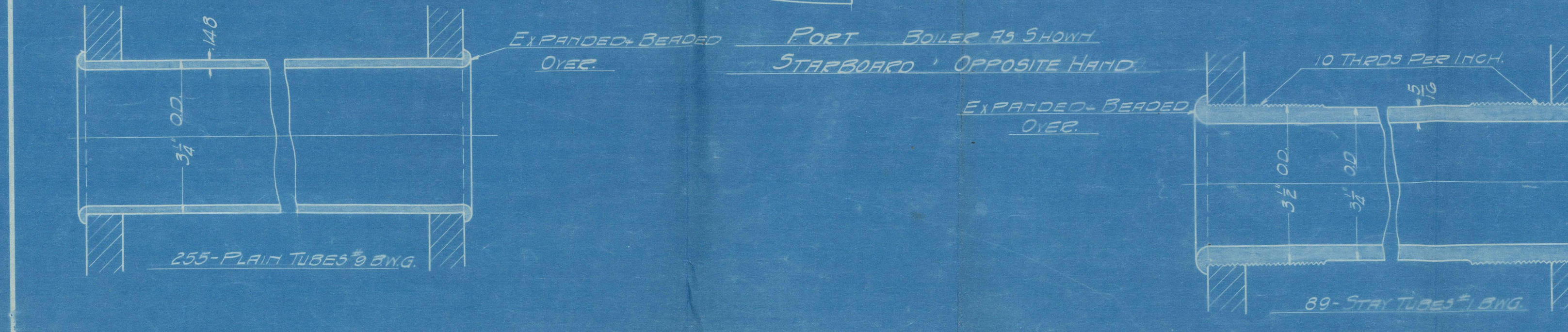
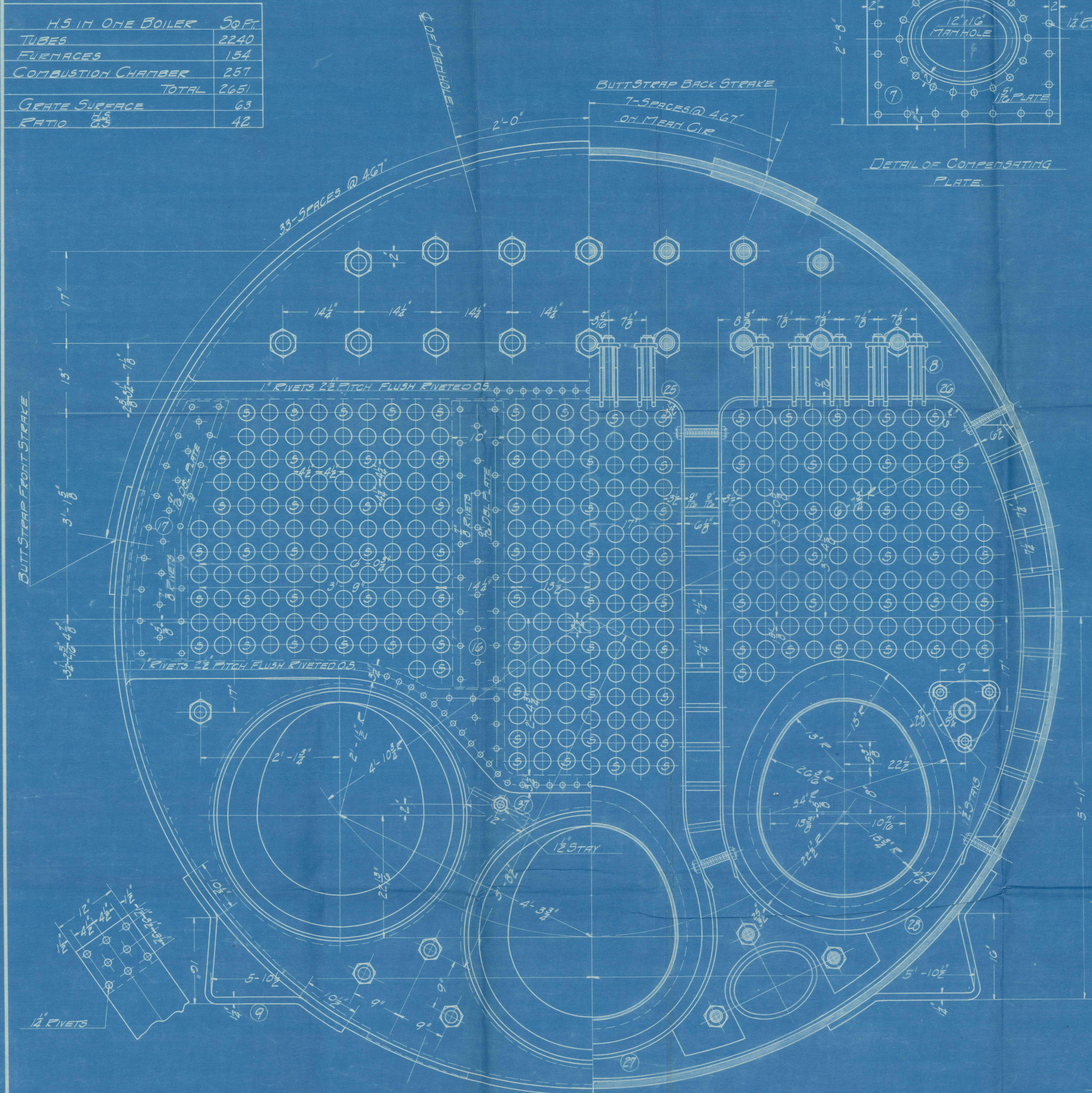


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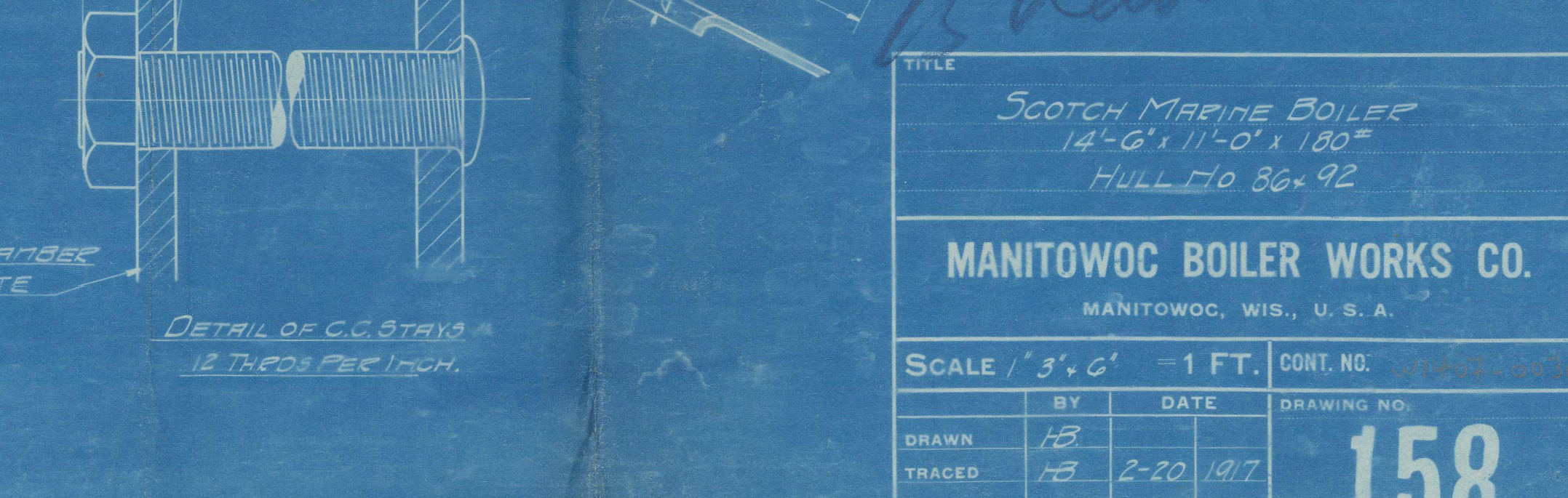
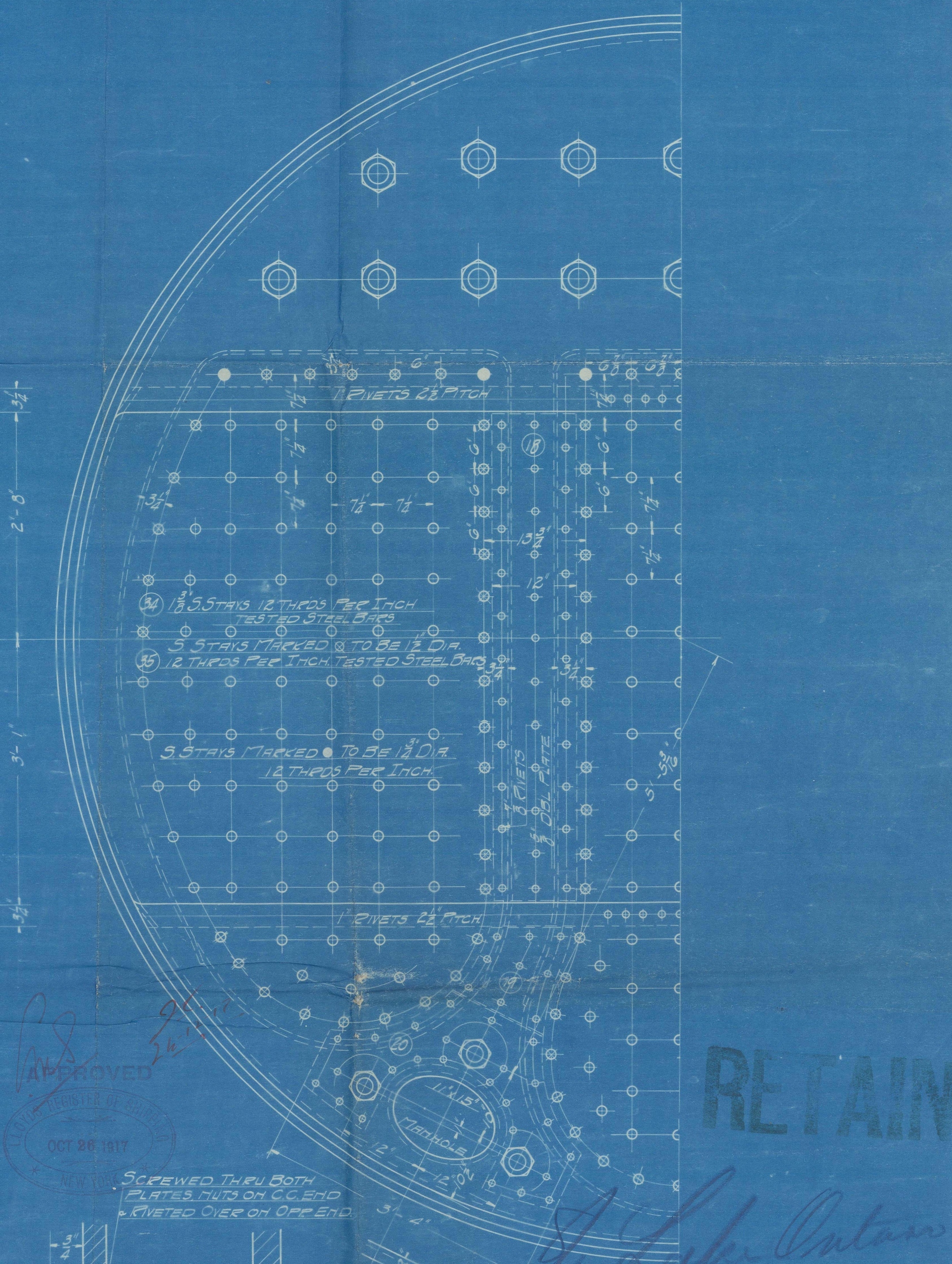
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TABLE OF FORMULAS FOR STRENGTH AT 180° W.P.		
BRITISH UNITS		
SHELL PLATES	$1021.92 \times 100 \times 1.125 \times 1.125$	2178
UPPER HEADS	$1021.92 \times 100 \times 1.125 \times 1.125$	230
CENTER REAR HEAD	$1021.92 \times 100 \times 1.125 \times 1.125$	1955
FRONT TUBE SHEET	$1021.92 \times 100 \times 1.125 \times 1.125$	211
WIDE WATER SPACE	$1021.92 \times 100 \times 1.125 \times 1.125$	1955
REAR TUBE SHEET	$1021.92 \times 100 \times 1.125 \times 1.125$	208
C.C. BACK HEAD	$1021.92 \times 100 \times 1.125 \times 1.125$	2325
C.C. TOP PLATE	$1021.92 \times 100 \times 1.125 \times 1.125$	208
C.C. SIDE	$1021.92 \times 100 \times 1.125 \times 1.125$	216
GUIDES	$1021.92 \times 100 \times 1.125 \times 1.125$	191
FLUE SPACE	$1021.92 \times 100 \times 1.125 \times 1.125$	201.5
THRU STAYS	$1021.92 \times 100 \times 1.125 \times 1.125$	181
STAYS IN FIELD	$1021.92 \times 100 \times 1.125 \times 1.125$	185
STAYS IN WATERWAY	$1021.92 \times 100 \times 1.125 \times 1.125$	255
STAYS IN FIELD	$1021.92 \times 100 \times 1.125 \times 1.125$	3328

H.S. IN ONE BOILER	30 FT.
TUBES	2240
FLUE SPACES	154
COMBUSTION CHAMBER	257
TOTAL	2651
GRATE SURFACE	63
RATIO	42



BILL OF MATERIAL FOR 4-BOILERS			
QTY	DESCRIPTION	UNIT	LOCATION
1	PLATES 210" x 100" x 1/2"	1740	TOT SHELL
2	60" x 202 1/2" x 1/2"	0.5 BUTTS	STAYS
4	60" x 202 1/2" x 1/2"	1.5	STAYS
6	60" x 202 1/2" x 1/2"	1.5	STAYS
7	31" x 118" x 1/2"	1.5	STAYS
8	12" x 54" x 1/2"	1.5	STAYS
9	12" x 54" x 1/2"	1.5	STAYS
10	50" x 118" x 1/2"	1.5	STAYS
11	50" x 118" x 1/2"	1.5	STAYS
12	50" x 118" x 1/2"	1.5	STAYS
13	50" x 118" x 1/2"	1.5	STAYS
14	50" x 118" x 1/2"	1.5	STAYS
15	50" x 118" x 1/2"	1.5	STAYS
16	50" x 118" x 1/2"	1.5	STAYS
17	50" x 118" x 1/2"	1.5	STAYS
18	50" x 118" x 1/2"	1.5	STAYS
19	50" x 118" x 1/2"	1.5	STAYS
20	50" x 118" x 1/2"	1.5	STAYS
21	50" x 118" x 1/2"	1.5	STAYS
22	50" x 118" x 1/2"	1.5	STAYS
23	50" x 118" x 1/2"	1.5	STAYS
24	50" x 118" x 1/2"	1.5	STAYS
25	50" x 118" x 1/2"	1.5	STAYS
26	50" x 118" x 1/2"	1.5	STAYS
27	50" x 118" x 1/2"	1.5	STAYS
28	50" x 118" x 1/2"	1.5	STAYS
29	50" x 118" x 1/2"	1.5	STAYS
30	50" x 118" x 1/2"	1.5	STAYS
31	50" x 118" x 1/2"	1.5	STAYS
32	50" x 118" x 1/2"	1.5	STAYS
33	50" x 118" x 1/2"	1.5	STAYS
34	50" x 118" x 1/2"	1.5	STAYS
35	50" x 118" x 1/2"	1.5	STAYS
36	50" x 118" x 1/2"	1.5	STAYS
37	50" x 118" x 1/2"	1.5	STAYS
38	50" x 118" x 1/2"	1.5	STAYS
39	50" x 118" x 1/2"	1.5	STAYS



NOTE
GRATE BARS 6'0" LONG NATURAL DRIFT
EST. BASE PER-ONE BAR PER 180°
3" DIA. SAFETY VALVE COMPARED AFTER 14" DIA. COM. CHAMBER
ALL CHIMNEY & RIVETS 1/2" PITCH UNLESS
OTHERWISE NOTED
TO PASS BRITISH UNITS REQUIREMENTS FOR
W.P. OF 180° PER 30 INCH.

APPROVED
DATE 10/20/1917
BY [Signature]
MANITOWOC BOILER WORKS CO.

SCOTCH MARINE BOILER
14'-6" x 11'-0" x 180°
HULL NO 36-92
MANITOWOC BOILER WORKS CO.
MANITOWOC, WIS., U.S.A.
SCALE 3/4" = 1 FT.
CONT. NO. 158
DRAWN 1/2
TRACED 1/2
CHECKED 1/2
APPROVED 1/2

20.

London



Manitowoc
90, 91, 93, 94, 95
Shipping



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